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Rejections under 35 U.S.C. § 112

Claims 1-2, 17-18, 21, 23-24 and 28-30 stand rejected under § 112, first paragraph as containing subject matter which is not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention, for the reason that a statement that the EX1965py seeds deposited with the American Type Culture Collection on July 7, 1998 as accession number 203034 will irrevocably and without restriction or condition be released to the public upon the issuance of a patent had not been submitted. The submission of such a statement herewith is believed to obviate this rejection, and its withdrawal is respectfully requested.

Claims 1-2, 17-18, 21, 23-24 and 28-30 stand rejected under § 112, first paragraph, the Examiner taking the position that the specification is only enabled for the mutant corn seed designated UO95py. The Examiner takes the position that the phenotype of seed of different maize lines is differentially affected by their various genotypes, and that because of this the identity and number of genes altered by EMS mutagenesis cannot be predicted. The Examiner opines that undue experimentation is required to select maize lines to mutagenize in order to obtain seed exhibiting the desired phenotypic characteristics. This rejection is respectfully traversed.

The Examiner has requested additional information about the sources of inbred lines described in the Declaration Pursuant to 37 C.F.R. § 1.132 submitted April 22, 2003 (hereinafter, the "First Declaration"), the relationship, if any, between them, or whether the inbred lines exhibit the claimed phenotypic characteristics. As explained in the interview of October 21, 2003, Applicants are bound by obligations of confidentiality to the originators of the various inbred lines and cannot specifically identify each originator. However, as indicated in the Second Declaration Pursuant to 37 C.F.R. § 1.132 submitted herewith (hereinafter the "Second Declaration"), the seven inbred lines set forth in Table 1 of the First Declaration were obtained from five different originators, designated originators A through D and F. Paragraph 2 of the Second Declaration describes how the various lines were coded and Table 1 of the Second Declaration shows how the crossing maps may be interpreted. Table 2 of the Second Declaration maps out the crosses made

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among the seven inbred lines from Table 1 of the First Declaration, along with phytate, protein and oil content of the various hybrids obtained from these crosses.

Table 3 of the Second Declaration compares the protein, oil, and phytic acid content of 24 independent low phytate events with the respective isolines. Inbred lines from five different originators are represented in Table 3. Six of the 24 low phytate inbred events fall within the scope of the present claims. The Examiner's attention is directed to the inbred described as A4py0719, line 10 of Table 3. The low phytate mutant A4py0719 has 14.4% of the phytate found in the wild type isolate, 13.5 % protein, and 4.1% oil. Table 2 of the Second Declaration (and Table 1 of the First Declaration) shows that crosses of A4py0719 with A5py0380, A1py1656, and A1py1672 yield hybrids which fall within the scope of the present claims. It is notable that the oil content of these crosses is higher than that of A4py0719.

Table 4 of the Second Declaration shows inorganic phosphorus, protein, and oil contents for hybrids produced during the 2003 summer growing season. The Examiner's attention is directed to the statement in paragraph 6 of the Second Declaration that inorganic phosphorus content is inversely correlated with phytic acid content, and to the statement in the specification at page 32, lines 27-28 that screening for higher levels of inorganic P in grain is an alternate method for testing low phytate mutants. The inbreds used to produce these hybrids came from originators A, L, G, C, D, E, N, I, and M. The Examiner's attention is directed to hybrids A8py0491 x A1py1656, A4/A4py0719 x A1py1656, A4py0719 x A1py1656, L24/L24py0490 x A5py0731, L24/L24py0490 x A1py1656, G20 x A1py1656, A4py0719/A8py0491 x A1py1656/A5py0380, C11/C11py0138 x A1py1656, C11py0138 x A1py1656, C11py0138 x M26py1656, C11py0138 x M27py1656, C11py0138 x M29py1656, A1py1656/A5py0380 x A4py0719, and A1py1656/A5py0380 x C11py0138, all of which have inorganic phosphorus, protein, and oil contents which fall within the scope of the present claims.

The Examiner has suggested that a limited number of parental lines appear to have been used to generate hybrid plants that exhibit the claimed phenotypic characteristics. The Second Declaration indicates that inbreds from a number of originators, representing significant genetic diversity, may be used to generate hybrids

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which fall within the scope of the present claims. Applicants again point out that high oil corn and high protein corn were commercially available at the priority date of the present application and that such corn would also be suitable starting materials for making inbreds and hybrids which fall within the scope of the present claims. The specification teaches how to measure phytate, protein and oil content of seeds. The person of ordinary skill in the corn breeding art would be able to use the teachings of the present application to choose suitable inbreds to cross to obtain hybrid seed having the phytate, protein, and oil content of the present claims. Withdrawal of the rejection of claims 1-2, 17-18, 21, 23-24 and 28-30 under § 112, first paragraph is therefore respectfully requested.

In light of the arguments and evidence presented, Applicants submit that all of the rejections contained in the Office Action dated July 29, 2003 have been overcome, and that the application is in condition for allowance or appeal. Should the Examiner wish to discuss the application further, she is invited to telephone the undersigned. If any additional fees are due with respect to this submission, authorization is hereby given to charge such fees, or to credit any overpayment, to Deposit Account No. 02-1197.

Respectfully submitted,
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